WEST Search History

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DATE: Wednesday, March 24, 2004

Hide?	Set Name	Query	Hit Count
		DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ	
☐	L7	L6 and (terminating or stop$)	12
☐	L6	L5 and immiscible	13
☐	L5	etching and wafer and (fluid interface)	75
		DB=TDBD; PLUR=YES; OP=ADJ	
☐	L4	etching and wafer and (fluid interface)	0
☐	L3	etching and wafer and (fluids interface)	0
☐	L2	etching and $wafer$ and (fluids same immiscible same density)	0
		DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ	
☐	L1	etching and $wafer$ and (fluids same immiscible same density)	13

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Search Results - Record(s) 61 through 70 of 75 returned.

☐ 61. Document ID: US 5884640 A

Using default format because multiple data bases are involved.

L5: Entry 61 of 75 File: USPT Mar 23, 1999

US-PAT-NO: 5884640
DOCUMENT-IDENTIFIER: US 5884640 A

TITLE: Method and apparatus for drying substrates

DATE-ISSUED: March 23, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Fishkin; Boris	San Jose	CA		
Hearne; John S.	Los Altos	CA		
Lowrance; Robert B.	Los Gatos	CA		

US-CL-CURRENT: 134/95.2; 134/186, 134/902, 34/77

Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWIC | Draw De

☐ 62. Document ID: US 5882496 A

L5: Entry 62 of 75 File: USPT Mar 16, 1999

US-PAT-NO: 5882496
DOCUMENT-IDENTIFIER: US 5882496 A

TITLE: Porous silicon structures with high surface area/specific pore size

DATE-ISSUED: March 16, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Northrup; M. Allen	Berkeley	CA		
Yu; Conrad M.	Antioch	CA		
Raley; Norman F.	Danville	CA		

US-CL-CURRENT: 204/601; 210/502.1, 210/506, 55/523, 96/11

h e b b cg b cc e

ABSTRACT:

Fabrication and use of porous silicon structures to increase surface area of heated reaction chambers, electrophoresis devices, and thermopneumatic sensor-actuators, chemical preconcentrates, and filtering or control flow devices. In particular, such high surface area or specific pore size porous silicon structures will be useful in significantly augmenting the adsorption, vaporization, desorption, condensation and flow of liquids and gasses in applications that use such processes on a miniature scale. Examples that will benefit from a high surface area, porous silicon structure include sample preconcentrators that are designed to adsorb and subsequently desorb specific chemical species from a sample background; chemical reaction chambers with enhanced surface reaction rates; and sensor-actuator chamber devices with increased pressure for thermopneumatic actuation of integrated membranes. Examples that benefit from specific pore sized porous silicon are chemical/biological filters and thermally-activated flow devices with active or adjacent surfaces such as electrodes or heaters.

23 Claims, 9 Drawing figures
Exemplary Claim Number: 1,11,12
Number of Drawing Sheets: 3

63. Document ID: US 5846638 A

L5: Entry 63 of 75 File: USPT Dec 8, 1998

US-PAT-NO: 5846638
DOCUMENT-IDENTIFIER: US 5846638 A

TITLE: Composite optical and electro-optical devices

DATE-ISSUED: December 8, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Meissner; Helmuth E.	Pleasanton	CA		

US-CL-CURRENT: 428/220; 117/1, 148/DIG.12, 148/DIG.135, 156/153, 156/281, 428/408, 428/411.1, 428/700, 438/455

ABSTRACT:

A method of forming defect-free permanent bonds without the use of adhesives as well as devices formed by this method is disclosed. In general, the disclosed process allows similar or dissimilar crystalline, vitreous or dense polycrystalline ceramic, metallic or organic polymeric components to be first joined by optical contacting and then heat treated to stabilize the bond. The heat treatment can be performed at a low enough temperature to prevent interdiffusion between species, thus insuring that the bond is not subjected to excessive mechanical stresses and that the materials do not undergo phase changes. Therefore stable bonds can be formed using the disclosed process between materials of widely differing physical, mechanical, thermal, optical and electro-optical properties such as different hardness, chemical durability, mechanical strength, coefficients of thermal

expansion, thermal conductivity, crystal structure, refractive indices, optical birefringence, nonlinear optical coefficients, electrical conductivity, or semiconducting properties.

15 Claims, 50 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 8

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw De

☐ 64. Document ID: US 5746368 A

L5: Entry 64 of 75 File: USPT May 5, 1998

US-PAT-NO: 5746368
DOCUMENT-IDENTIFIER: US 5746368 A

TITLE: Molten solder dispensing system

DATE-ISSUED: May 5, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Straub; Marc Alan	Dearborn Heights	MI		
DiPiazza; Frank Burke	Highland	MI		
Jairazbhoy; Vivek Amir	Farmington Hills	MI		
Goenka; Lakhi Nandial	Ann Arbor	MI		
Stevenson; Randy Claude	Saline	MI		

US-CL-CURRENT: 228/33; 222/594, 228/256

ABSTRACT:

An apparatus for dispensing solder includes a nozzle body having a plurality of flow channels formed therein. Each flow channel includes an inlet end and a dispenser end for dispensing solder. The nozzle body forms a nipple surrounding each dispenser end, and the nozzle body further forms a shielding chamber in communication with each dispenser end for protecting the respective nipple, and optionally providing flow of inerting gas and/or excluding ambient oxygen from the soldering area. The nozzle bodies comprise micro-machined silicon. Various flow channel configurations are provided for improved flow characteristics.

6 Claims, 17 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 6

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw De

☐ 65. Document ID: US 5725718 A

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L5: Entry 65 of 75 File: USPT Mar 10, 1998

US-PAT-NO: 5725718
DOCUMENT-IDENTIFIER: US 5725718 A

TITLE: Clamp ring for domed heated pedestal in wafer processing chamber

DATE-ISSUED: March 10, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Banholzer; Thomas Joseph	San Jose	CA		
Marohl; Dan	San Jose	CA		

US-CL-CURRENT: 156/345.51; 118/728, 204/298.15

ABSTRACT:

A chamber for processing a semiconductor wafer, in which the chamber houses a domed pedestal for supporting the wafer inside the chamber and a clamp ring having a seat formed therein. The seat receives and holds down the periphery of the wafer onto the domed pedestal and includes a wafer engaging surface which engages and holds down the periphery of the wafer. In use the wafer engaging surface defines an angle to the horizontal which is greater than or equal to the angle to the horizontal defined by a tangent to the domed pedestal at the point where the periphery of the wafer is held down onto the pedestal. Typically the angle to the horizontal defined by the seat is about 3.degree. greater than the angle of the tangent to the domed pedestal at the point where the wafer is held down onto the pedestal.

16 Claims, 6 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 3

66. Document ID: US 5695833 A

L5: Entry 66 of 75 File: USPT Dec 9, 1997

US-PAT-NO: 5695833
DOCUMENT-IDENTIFIER: US 5695833 A

TITLE: Method for uniform film coating of substrates

DATE-ISSUED: December 9, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Bok; Hendrik F.	Fairhaven	MA	02719	
Birbara; Philip J.	Windsor Locks	CT	06096	

US-CL-CURRENT: 427/600; 427/434.3, 427/434.5

h e b b cg b cc e

ABSTRACT:

Method and apparatus for applying thin films of coating material with a high degree of uniformity, high utilization of coating fluid and superior adhesion characteristics are disclosed. According to the method, an inverted substrate is moved horizontally and countercurrent to a two stage coating fluid applicator assembly. The first coating stage utilizes megasonic pressure waves directed inclinedly upwardly through the coating fluid/substrate surface interface to wet, clean, degas and deposit coating fluid on the substrate surface. A second stage removes excess coating fluid at the substrate's trailing edge so as to precisely establish a thin and uniform coating film. After the coating has been applied, spinning of the substrate may be employed to enable further coating film uniformity and to increase the film's drying rate.

5 Claims, 7 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 5

67. Document ID: US 5556479 A

L5: Entry 67 of 75 File: USPT Sep 17, 1996

US-PAT-NO: 5556479
DOCUMENT-IDENTIFIER: US 5556479 A

TITLE: Method and apparatus for drying semiconductor wafers

DATE-ISSUED: September 17, 1996

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Bran; Mario E.	Garden Grove	CA		

US-CL-CURRENT: 134/1.3; 134/19

ABSTRACT:

A method for drying semiconductor wafers produces ultra-clean wafers without conventional drying chemicals. The method involves slowing draining a rinsing fluid from a processing tank while heating the wafer at the fluid interface as the wafer emerges from the rinsing fluid. The portion of the wafer surface at the fluid interface is heated to a temperature greater than the rinsing fluid to drive contaminant particles away from the wafer surface. An apparatus for performing this drying method also is provided.

6 Claims, 4 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 4

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw De

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☐ 68. Document ID: US 5236602 A

L5: Entry 68 of 75 File: USPT Aug 17, 1993

US-PAT-NO: 5236602
DOCUMENT-IDENTIFIER: US 5236602 A

TITLE: Dense fluid photochemical process for liquid substrate treatment

DATE-ISSUED: August 17, 1993

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Jackson; David P.	Saugus	CA		

US-CL-CURRENT: 210/748; 210/760, 210/761, 210/908

ABSTRACT:

A process for removing undesired material from a chosen substrate by exposing the substrate simultaneously to ultraviolet radiation and a selected dense fluid, wherein the radiation produces a photochemical reaction that removes the undesired material from the substrate and the dense fluid enhances the removal of the undesired material. In an alternative embodiment, a reactive agent may additionally be used. The process may be used to remove contaminants from a substrate, etch a substrate surface, or destroy toxic organic material in industrial wastes.

13 Claims, 3 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 1

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw De

☐ 69. Document ID: US 5215592 A

L5: Entry 69 of 75 File: USPT Jun 1, 1993

US-PAT-NO: 5215592
DOCUMENT-IDENTIFIER: US 5215592 A

TITLE: Dense fluid photochemical process for substrate treatment

DATE-ISSUED: June 1, 1993

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Jackson; David P.	Saugus	CA		

US-CL-CURRENT: 134/1; 134/10, 210/748

h e b b cg b cc e

ABSTRACT:

A process for removing undesired material from a chosen substrate by exposing the substrate simultaneously to ultraviolet radiation and a selected dense fluid, wherein the radiation produces a photochemical reaction that removes the undesired material from the substrate and the dense fluid enhances the removal of the undesired material. In an alternative embodiment, a reactive agent may additionally be used. The process may be used to remove contaminants from a substrate, etch a substrate surface, or destroy toxic organic material in industrial wastes.

11 Claims, 3 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 1

Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWMC | Drawi De

☐ 70. Document ID: US 5068040 A

L5: Entry 70 of 75 File: USPT Nov 26, 1991

US-PAT-NO: 5068040
DOCUMENT-IDENTIFIER: US 5068040 A

TITLE: Dense phase gas photochemical process for substrate treatment

DATE-ISSUED: November 26, 1991

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Jackson; David P.	Saugus	CA		

US-CL-CURRENT: 210/748; 134/1, 134/31, 210/760

ABSTRACT:

A process for removing undesired material from a chosen substrate by exposing the substrate simultaneously to ultraviolet radiation and a selected dense fluid, wherein the radiation produces a photochemical reaction that removes the undesired material from the substrate and the dense fluid enhances the removal of the undesired material. In an alternative embodiment, a reactive agent may additionally be used. The process may be used to remove contaminants from a substrate, etch a substrate surface, or destroy toxic organic material in industrial wastes.

15 Claims, 3 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 1

Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWMC | Drawi De

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Term	Documents
ETCHING	403603
ETCHINGS	2460
WAFER	333616
WAFERS	108766
FLUID	1649557
FLUIDS	345026
INTERFACE	809230
INTERFACES	193285
((ETCHING AND WAFER) AND (FLUID ADJ INTERFACE)).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	75
(ETCHING AND WAFER AND (FLUID INTERFACE)).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	75

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Search Results - Record(s) 11 through 12 of 12 returned.

☐ 11. Document ID: US 6368871 B1

Using default format because multiple data bases are involved.

L7: Entry 11 of 12 File: USPT Apr 9, 2002

US-PAT-NO: 6368871
DOCUMENT-IDENTIFIER: US 6368871 B1
** See image for Certificate of Correction **

TITLE: Non-planar microstructures for manipulation of fluid samples

DATE-ISSUED: April 9, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Christel; Lee Allan	Palo Alto	CA		
Kovacs; Gregory T. A.	Stanford	CA		
McMillan; William A.	Cupertino	CA		
Northrup; M. Allen	Berkeley	CA		
Petersen; Kurt E.	San Jose	CA		
Pourahmadi; Farzad	Fremont	CA		

US-CL-CURRENT: 436/180; 204/450, 204/600, 210/767, 366/336, 366/DIG.3, 422/100, 422/68.1

Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWIC | Draw D

☐ 12. Document ID: US 5932100 A

L7: Entry 12 of 12 File: USPT Aug 3, 1999

US-PAT-NO: 5932100
DOCUMENT-IDENTIFIER: US 5932100 A
** See image for Certificate of Correction **

TITLE: Microfabricated differential extraction device and method

h e b b cg b cc e

DATE-ISSUED: August 3, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Yager; Paul	Seattle	WA		
Brody; James P.	Seattle	WA		
Holl; Mark R.	Seattle	WA		
Forster; Fred K.	Seattle	WA		
Galambos; Paul C.	Seattle	WA		

US-CL-CURRENT: 210/634; 210/511, 210/739, 210/748, 210/96.1, 216/56, 366/DIG.1, 422/55, 422/69, 436/178

ABSTRACT:

This invention provides a microfabricated extraction system and methods for extracting desired particles from a sample stream containing desired and undesired particles. The sample stream is placed in laminar flow contact with an extraction stream under conditions in which inertial effects are negligible. The contact between the two streams is maintained for a sufficient period of time to allow differential transport of the desired particles from the sample stream into the extraction stream. In a preferred embodiment the differential transport mechanism is diffusion. The extraction system of this invention coupled to a microfabricated diffusion-based mixing device and/or sensing device allows picoliter quantities of fluid to be processed or analyzed on devices no larger than silicon wafers.

38 Claims, 12 Drawing figures
Exemplary Claim Number: 1,2,3
Number of Drawing Sheets: 9

Term	Documents
TERMINATING	441906
TERMINATINGS	2
STOP$	0
STOP	1355835
STOPA	287
STOPAA	1
STOPAAAINST	1
STOPAAAINST-A	1
STOPAACK	1
STOPAACK-H	1
STOPAAE	1

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Search Results - Record(s) 11 through 13 of 13 returned.

☐ 11. Document ID: US 6297352 B1

Using default format because multiple data bases are involved.

L1: Entry 11 of 13 File: USPT Oct 2, 2001

US-PAT-NO: 6297352
DOCUMENT-IDENTIFIER: US 6297352 B1

TITLE: Method of reducing metal ion content of film-forming resins using a liquid/liquid centrifuge

DATE-ISSUED: October 2, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wanat; Stanley F.	Scotch Plains	NJ		
Rahman; M. Dalil	Flemington	NJ		

US-CL-CURRENT: 528/502D; 430/270.1, 430/313, 528/503

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWMC | Draw De

☐ 12. Document ID: US 3972595 A

L1: Entry 12 of 13 File: USPT Aug 3, 1976

US-PAT-NO: 3972595
DOCUMENT-IDENTIFIER: US 3972595 A

TITLE: Ferrofluid display device

DATE-ISSUED: August 3, 1976

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Romankiw; Lubomyr T.	Briarcliff Manor	NY		
Slusarczuk; Marko M. G.	Boston	MA		
Thompson; David A.	Somers	NY		

US-CL-CURRENT: 359/228; 340/815.83

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ABSTRACT:

A magnetizable fluid which serves as a display liquid and which includes a suspension of colloidal magnetic particles is used in a display device. The magnetic fluid is opaque to provide optical contrast. A host liquid is substantially immiscible with the display liquid. The display liquid is carried in a reservoir section which is distributed about the periphery of a display field in the reservoir. Each propagation line of the display field is provided with a bubble generator, which passes bubbles by the input end of each line. A bubble switch coil draws selected bubbles across a gap to reach the associated propagation line in response to a signal impressed on the coil. A uniform rotating magnetic field is provided by a permanent magnet beneath the display or by orthogonal magnetic coils.

9 Claims, 17 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 6

Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWMC | Draw De

☐ 13. Document ID: US 3520656 A

L1: Entry 13 of 13 File: USOC Jul 14, 1970

US-PAT-NO: 3520656
DOCUMENT-IDENTIFIER: US 3520656 A

TITLE: SILICON CARBIDE COMPOSITIONS

DATE-ISSUED: July 14, 1970

INVENTOR-NAME: YATES PAUL C; MEADOWS GEOFFREY W

US-CL-CURRENT: 423/345, 423/440, 501/87, 501/88, 501/89, 501/90, 501/91, 501/92

Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWMC | Draw De

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Term	Documents
ETCHING	403603
ETCHINGS	2460
FLUIDS	345026
FLUID	1649557
IMMISCIBLE	54900
IMMISCIBLES	15
DENSITY	1243008
DENSITIES	150372

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DENSITYS	19
$WAFER$	0
WAFER	333616
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1. Document ID: US 20030048341 A1

Using default format because multiple data bases are involved.

L1: Entry 1 of 13 File: PGPB Mar 13, 2003

PGPUB-DOCUMENT-NUMBER: 20030048341
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030048341 A1

TITLE: High-throughput biomolecular crystallization and biomolecular crystal screening

PUBLICATION-DATE: March 13, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Mutz, Mitchell W.	Palo Alto	CA	US	
Ellson, Richard N.	Palo Alto	CA	US	
Stearns, Richard G.	Felton	CA	US	

US-CL-CURRENT: 347/100; 347/46, 347/95

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D

2. Document ID: US 20030012483 A1

L1: Entry 2 of 13 File: PGPB Jan 16, 2003

PGPUB-DOCUMENT-NUMBER: 20030012483
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030012483 A1

TITLE: Microfluidic control for waveguide optical switches, variable attenuators, and other optical devices

PUBLICATION-DATE: January 16, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Ticknor, Anthony J.	Cupertino	CA	US	
Kenney, John T.	Palo Alto	CA	US	

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Vacca, Giacomo	Menlo Park	CA	US
Saville, Dudley A.	Princeton	NJ	US
Purchase, Ken G.	Mountain View	CA	US

US-CL-CURRENT: 385/16; 385/15, 385/39

ABSTRACT:

Devices utilize elements carried by a fluid in a microchannel toswitch, attenuate, shutter, filter, or phase shift optical signals. In certain embodiments, a microchannel carries a gaseous or liquid slug that interacts with at least a portion of the optical power of an optical signal traveling through a waveguide. The microchannel may form part of the cladding of the waveguide, part of the core and the cladding, or part of the core only. The microchannel may also have ends or may be configured as a loop or continuous channel. The fluid devices may be self-latching or may be semi-latching. The fluid in the microchannel is moved using e.g., e.g., electrocapillarity, differential-pressure electrocapillarity, electrowetting, continuous electrowetting, electrophoresis, electroosmosis, dielectrophoresis, electro-hydrodynamic electrohydrodynamic pumping, magneto-hydrodynamic magnetohydrodynamic pumping, thermocapillarity, thermal expansion, dielectric pumping, and/or variable dielectric pumping.

☐ 3. Document ID: US 20020191048 A1

L1: Entry 3 of 13 File: PGPB Dec 19, 2002

PGPUB-DOCUMENT-NUMBER: 20020191048
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020191048 A1

TITLE: High-throughput biomolecular crystallization and biomolecular crystal screening

PUBLICATION-DATE: December 19, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Mutz, Mitchell W.	Palo Alto	CA	US	
Ellson, Richard N.	Palo Alto	CA	US	
Stearns, Richard G.	Felton	CA	US	

US-CL-CURRENT: 347/46

ABSTRACT:

The present invention provides a method for the acoustic ejection of fluid droplets from fluid-containing reservoirs to form arrays suitable for high-throughput combinatorial crystallization experiments. Such arrays may utilize very small fluid volumes, in the order of picoliters. The method is especially suited to preparing combinatorial libraries useful in developing techniques for crystallizing

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biomacromolecules, such as proteins. The small volumes conserve macromolecules that may be costly and rare, and permit the testing of a large number of experimental crystallization conditions for a given amount of a macromolecule. The time required for the experiments may be very short due to the small volumes. The invention is conducive to forming high-density microarrays of small volume crystallization experiments. Acoustic detection of crystals in situ, and distinction between biomacromolecular and non-biomacromolecular crystals, are also taught.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

☐ 4. Document ID: US 20020175079 A1

L1: Entry 4 of 13 File: PGPB Nov 28, 2002

PGPUB-DOCUMENT-NUMBER: 20020175079
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020175079 A1

TITLE: Device and method for the manipulation of a fluid sample

PUBLICATION-DATE: November 28, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Christel, Lee A.	Palo Alto	CA	US	
Kovacs, Gregory T.A.	Stanford	CA	US	
McMillan, William A.	Cupertino	CA	US	
Northrup, M. Allen	Berkeley	CA	US	
Petersen, Kurt E.	Santa Clara	CA	US	
Pourahmadi, Farzad	Fremont	CA	US	

US-CL-CURRENT: 204/601; 204/450, 204/451, 204/455, 204/456, 204/600, 204/605, 204/606, 366/336, 422/101, 422/99

ABSTRACT:

The invention provides a device and method for the manipulation of materials (e.g., particles, cells, macromolecules, such as proteins, nucleic acids or other moieties) in a fluid sample. The device comprises a substrate having a plurality of microstructures and an insulator film on the structures. Application of a voltage to the structures induces separation of materials in the sample. The device and method are useful for a wide variety of applications such as dielectrophoresis (DEP) or the separation of a target material from other material in a fluid sample.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

☐ 5. Document ID: US 20020155231 A1

L1: Entry 5 of 13 File: PGPB Oct 24, 2002

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PGPUB-DOCUMENT-NUMBER: 20020155231
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020155231 A1

TITLE: Use of immiscible fluids in droplet ejection through application of focused acoustic energy

PUBLICATION-DATE: October 24, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Ellson, Richard N.	Palo Alto	CA	US	
Mutz, Mitchell W.	Palo Alto	CA	US	
Foote, James K.	Cupertino	CA	US	

US-CL-CURRENT: 427/600; 427/421

ABSTRACT:

The invention provides a method for generating droplets. Extremely fine droplets may be generated (on the order of 1 picoliter or less) using focused acoustic energy to eject the droplets from a reservoir containing two or more immiscible fluids. The droplets may include immiscible fluids or a single fluid. Typically, the droplets are ejected onto discrete sites on a substrate surface so as to form an array thereon. In some instances, the reservoirs contain layers of immiscible fluids, wherein an upper layer exhibits a nonuniform thickness. In such a case, fluid from a lower fluid layer may be propelled through an aperture region of the upper layer.

6. Document ID: US 20020094537 A1

L1: Entry 6 of 13 File: PGPB Jul 18, 2002

PGPUB-DOCUMENT-NUMBER: 20020094537
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020094537 A1

TITLE: Device and method for tracking conditions in an assay

PUBLICATION-DATE: July 18, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Ellson, Richard N.	Palo Alto	CA	US	
Mutz, Mitchell W.	Palo Alto	CA	US	
Harris, David L.	Mountain View	CA	US	

US-CL-CURRENT: 435/6; 427/2.11, 435/287.2, 435/7.1

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ABSTRACT:

The invention provides a device comprising a substrate having a plurality of different molecular probes attached to a surface thereof and an integrated indicator that exhibits a response when exposed to a condition to which the substrate may be exposed. Each different molecular probe is selected to interact with a different corresponding target, and the indicator response is detectable after removing the indicator from the condition. Alternatively, a substrate is provided having a plurality of molecular probes attached to a surface thereof and a plurality of different integrated indicators. Each indicator is selected to exhibit a response when exposed to one of a plurality of conditions to which the substrate may be exposed. The inventive devices are typically used for biomolecular, or more specifically, nucleotidic assays. The invention also provides for various apparatuses and methods for assaying a sample using the inventive devices.

☐ 7. Document ID: US 6642061 B2

L1: Entry 7 of 13 File: USPT Nov 4, 2003

US-PAT-NO: 6642061
DOCUMENT-IDENTIFIER: US 6642061 B2

TITLE: Use of immiscible fluids in droplet ejection through application of focused acoustic energy

DATE-ISSUED: November 4, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ellson; Richard N.	Palo Alto	CA		
Mutz; Mitchell W.	Palo Alto	CA		
Foote; James K.	Cupertino	CA		

US-CL-CURRENT: 436/180; 347/46, 422/100, 436/86, 436/94

ABSTRACT:

The invention provides a method for generating droplets. Extremely fine droplets may be generated (on the order of 1 picoliter or less) using focused acoustic energy to eject the droplets from a reservoir containing two or more immiscible fluids. The droplets may include immiscible fluids or a single fluid. Typically, the droplets are ejected onto discrete sites on a substrate surface so as to form an array thereon. In some instances, the reservoirs contain layers of immiscible fluids, wherein an upper layer exhibits a nonuniform thickness. In such a case, fluid from a lower fluid layer may be propelled through an aperture region of the upper layer.

25 Claims, 6 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 3

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Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw De

☐ 8. Document ID: US 6536106 B1

L1: Entry 8 of 13 File: USPT Mar 25, 2003

US-PAT-NO: 6536106
DOCUMENT-IDENTIFIER: US 6536106 B1

TITLE: Electric field assisted assembly process

DATE-ISSUED: March 25, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Jackson; Thomas N.	State College	PA		
Mayer; Theresa	Port Matilda	PA		

US-CL-CURRENT: 29/872; 204/155, 204/164, 204/232, 29/832, 29/834, 29/868, 29/873, 427/462, 427/466, 427/467, 427/469, 438/14, 438/400, 438/401

ABSTRACT:

This invention is directed toward a process of manufacturing, including a technique of assembling parts of an apparatus. The technique includes forming electrode structures on a substrate, suspending the apparatus part or parts in a dielectric medium between electrodes of the electrode structure, and using near-field (that is, short range) electric field forces to align the part or parts in pre-determined positions in accordance with the desired apparatus topography. The part or parts may include semiconductor die, nanometer wires for making connections to devices, or other components requiring precision alignment.

38 Claims, 6 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 6

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw De

☐ 9. Document ID: US 6512087 B1

L1: Entry 9 of 13 File: USPT Jan 28, 2003

US-PAT-NO: 6512087
DOCUMENT-IDENTIFIER: US 6512087 B1

TITLE: Fractionation of resins using a static mixer and a liquid-liquid centrifuge

DATE-ISSUED: January 28, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY

h e b b g e e e f e g ef b e

Wanat; Stanley F.	Scotch Plains	NJ
Rahman; M. Dalil	Flemington	NJ
Xiang; Zhong	Somerset	NJ

US-CL-CURRENT: 528/502D; 210/634, 430/192, 430/193, 528/129, 528/148

ABSTRACT:

Disclosed is a method for producing low molecular weight oligomers of a film forming resin, which involves: a) providing a solution of the film forming resin in a first solvent system comprising a photoresist solvent, and optionally a water-soluble organic solvent; b) providing a second solvent system comprising at least one substantially pure C.sub.5 -C.sub.8 alkane and/or at least one aromatic compound having at least one hydrocarbyl substituent and/or water/C.sub.1 -C.sub.4 alcohol mixture; and performing steps c)-e) in the following order: c) mixing the solutions from a) and second solvent system from b) in a static mixer for a time period sufficient for efficient mixing; d) feeding the mixture from c) and second solvent system from b) through two separate inlet ports into a liquid/liquid centrifuge, one of the inlet ports feeding the mixture from c), the second inlet port feeding the second solvent system from b) into said liquid/liquid centrifuge at a feed ratio of the mixture from c) to the second solvent system from b) of from about 10/90 to about 90/10, at a temperature of from about 0.degree. C. up to maximum temperature that is less than the boiling point of the lowest boiling solvent in the first or second solvent system; e) rotating the mixture from step d) inside the liquid/liquid centrifuge at a rotational speed sufficient to separate the mixture from step d) into two separate phases, and then collecting the two separate phases, each from two separate outlet ports, into two separate containers, wherein the heavier phase (H) comprises a fractionated film forming resin comprising higher molecular weight fractions of the film forming resin and the lighter phase (L) comprises low molecular weight oligomers of the film forming resin. The present invention also provides a method for producing a photoresist composition, and method for producing a microelectronic device using the aforementioned fractionated resin or low molecular weight oligomers of the film forming resin.

15 Claims, 3 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 3

10. Document ID: US 6368871 B1

L1: Entry 10 of 13 File: USPT Apr 9, 2002

US-PAT-NO: 6368871
DOCUMENT-IDENTIFIER: US 6368871 B1
**** See image for Certificate of Correction ****

TITLE: Non-planar microstructures for manipulation of fluid samples

DATE-ISSUED: April 9, 2002

INVENTOR-INFORMATION:

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NAME	CITY	STATE	ZIP CODE	COUNTRY
Christel; Lee Allan	Palo Alto	CA		
Kovacs; Gregory T. A.	Stanford	CA		
McMillan; William A.	Cupertino	CA		
Northrup; M. Allen	Berkeley	CA		
Petersen; Kurt E.	San Jose	CA		
Pourahmadi; Farzad	Fremont	CA		

US-CL-CURRENT: 436/180; 204/450, 204/600, 210/767, 366/336, 366/DIG.3, 422/100, 422/68.1

ABSTRACT:

This invention comprises an apparatus and method for the manipulation of materials, including particles, cells, macromolecules, such as proteins, nucleic acids and other moieties, in fluid samples. The apparatus comprises an enclosed chamber on a chip having an internal microstructure with surface area substantially greater than the facial surface area of the internal structure. Generally the internal microstructure comprises a continuous network of channels, each of which has a depth substantially greater than its width. The network may comprise a single channel, a single channel with multiple branches, multiple channels, multiple channels with multiple branches, and any combination thereof. The internal structure may present an inert, non-reactive surface, or be coated with a reactive ligand, or be electrically conductive and optionally be coated with an electrical insulator. Discrete portions of the internal structure may differ in structural and surface properties. Multiple chips may be linked together to create a multiplexed array of chambers, optionally linked to other analytical devices.

22 Claims, 15 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 11

Term	Documents
ETCHING	403603
ETCHINGS	2460
FLUIDS	345026
FLUID	1649557
IMMISCIBLE	54900
IMMISCIBLES	15
DENSITY	1243008
DENSITIES	150372
DENSITYS	19
$WAFER$	0

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WAFER	333616
(ETCHING AND $WAFER$ AND (FLUIDS SAME IMMISCIBLE SAME DENSITY)).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	13

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